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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,725	02/19/2004	Angelo Visconti	02-AG-210/EV	3423

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EXAMINER

LE, TOAN K

ART UNIT	PAPER NUMBER
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2824

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EK

Office Action Summary

Application No.

10/782,725

Applicant(s)

VISCANTI, ANGELO

Examiner

Toan Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 3-17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/16/04</u> . | 6) <input checked="" type="checkbox"/> Other: <u>East search history</u> . |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. This office acknowledge receipt of the following items from the Applicant:
Information Disclosure Statement (IDS) filed on July 16, 2004.
3. Information disclosed and list on PTO 1449 was considered.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyamoto (US 6,414,893).

Regarding claims 18-19, Miyamoto discloses a computing system comprising: a computing circuit (fig. 5); and at least one memory circuit (fig. 1), electrically coupled with the computing circuit, each of the at least one memory circuit (100) including: a multi-level,

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electrically-programmable memory with memory cells (Co-Cn of fig. 1) electrically programmable into at least two distinct programmed states ("10", "01", "00"), comprising: means for determining sub-groups of memory cells within a selected group of memory cells to be electrically programmed (the write voltage is applied only to the bit line corresponding to the memory cell in which a predetermined state is to be written, and a write prohibit voltage is applied to the bit lines corresponding to the other memory cells; see col. 7, lines 54-63), each sub-group of memory cells including the memory cells in the selected group that are to be brought into at least one respective programmed state of the at least two distinct programmed states (see figs 1-3 and col. 7, lines 54-63); and means (write voltage generating circuit e.g. 203 of fig. 1) for submitting the memory cells in each sub-group to a respective programming sequence (see col. 7, line 62 to col. 8, line 44; col. 9, lines 19-31; and see fig. 3).

Regarding claims 1-2, the apparatus as described above would perform the method as recited in claims 1-2.

Allowable Subject Matter

6. Claims 3-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest a method comprising the submitting in succession includes establishing a memory cell sub-group programming succession such that biasing conditions in which the memory cells of any given sub-group are verified as programmed to the

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desired programmed state are substantially close to biasing conditions in which the memory cells will be read in a standard read access as recited in claim 3; the at least two programming sequences having voltage ramps of different slope as recited in claim 5; and comparing the estimated overall programming time to the average programming time, if the estimated overall programming time exceeds the average programming time, programming the selected group of memory cells using the default programming sequence as recited in claim 16.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Micheloni et al. (US. 6,646,913), Gregori et al. (US. 6,788,579), Quader et al. (US. 6,967,872) disclose a method and system for programming a multilevel non-volatile memory cells.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Le whose telephone number is (571) 272-1872. The examiner can normally be reached on M-F (8.00AM - 5.30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL
December 08, 2005

A handwritten signature in black ink, appearing to read 'Richard Elms', with a date '12/12/05' written next to it.

RICHARD ELMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800